

Amendments to the Claims

Cancel Claims 2-13 and 15-26 and add new claims, Claims 27-50.

The following listing of claims replaces all prior versions and listings of claims in this application. These new claims are filed for the purpose of more precisely, concisely, and completely claiming subject matter for which Applicant is entitled to obtain letters patent. The new claims comply with 35 CFR § 1.171 and do not enlarge the scope of the original claims or add new matter.

With respect to Claims 1 and 14, these claims have been amended to remove the amendments made on Aug12.2009, which amendments were the basis for the present 35 USC § 112 rejections. Currently amended Claims 1 and 14 now overcome the examiner's § 112 rejections.

The total number of claims has been reduced from 26 to 24. The number of independent claims remains at two. No new fees are necessitated by these amendments.

Listing of the Claims

Claim 1 (currently amended)

A method for manufacturing a circular metal tank, comprising:

- a) providing an elongated sheet of metal;
- b) bending said sheet of metal along an upper longitudinal edge thereof to produce a first "L-shaped" bend;
- c) bending said sheet of metal along a lower longitudinal edge thereof to produce a second "chair-shaped" bend, wherein the term "chair-shaped" means a structure that has two parallel, elongated sheets of metal extending out on either side joined by a cross member with the angle between either sheet and the cross member being at least 45 degrees;
- d) moving said sheet of metal in a helical trajectory such that said second bend comes into proximity above said first bend; and,
- e) welding said second bend to said first bend to form a wall of said tank, said wall having a continuous, ~~leak-tight~~ helical weld;

wherein said first and second bends cooperate to form a helical roller track on an outside of said tank; and wherein said tank is supported on a plurality of rollers that engage said roller track; and wherein said tank is rotated about its longitudinal axis on said rollers such that said tank moves upwards as said sheet of metal is welded to a bottom thereof.

Claims 2-13 (canceled)

Claim 14 (presently amended)

A system for manufacturing a circular metal tank, comprising:

- (a) a decoiler for decoiling a coiled sheet of metal;
- (b) a bender/corrugator for introducing a first "L-shaped" bend along an upper longitudinal edge of said metal sheet and a second "chair-shaped" bend along a second longitudinal edge of said metal sheet, ~~said "chair-shaped" bend having a structure that has two parallel, elongated sheets of metal extending out on either~~

~~side joined by a cross member with the angle between either sheet and the cross member being at least 45 degrees;~~

- (c) a support system having rollers, for moving said metal sheet along a helical trajectory, supporting said tank and for rotating said tank about its longitudinal axis as said metal sheet is added to a bottom edge of said tank;
- (d) a welding positioner for positioning said second bend proximate and above said first bend; and,
- (e) a welder for welding said first and second bends together to form a ~~leak-tight~~ circular wall of said tank;

wherein said first and second bends cooperate to form a helical roller track on an outside of said tank; and wherein said tank is supported on said rollers that engage said roller track.

Claims 15-26 (canceled)

Claim 27 (new)

A method for manufacturing a circular metal tank wall from an elongate metal sheet, wherein said metal sheet has an upper edge, said method comprising the steps of:

- (a) providing the elongated metal sheet;
- (b) bending an upper edge of the metal sheet to produce an upper bend along the upper edge;
- (c) bending a lower edge of the metal sheet produce a lower bend along the lower edge;
- (d) aligning the lower bend into proximity with the upper bend;
- (e) welding the upper edge of the metal sheet to the lower edge of the metal sheet to form the circular tank wall, wherein the upper bend and the lower bend of the metal sheet cooperate to form a roller track, and wherein the roller track has two opposing roller track sides spaced apart to accommodate rollers that can engage the roller track and support the tank wall as it is being constructed; and,

- (f) rotating the tank wall about its longitudinal axis on the rollers such that the tank wall moves upwards as Step (d) and Step (e) are performed.

Claim 28 (new)

The method of Claim 27, wherein the elongated metal sheet provided at Step (a) is coiled, and wherein Step (a) comprises the step of decoiling the metal sheet.

Claim 29 (new)

The method of Claim 27, wherein the metal sheet is corrugated prior to Step (e).

Claim 30 (new)

The method of Claim 27, wherein Step (d) comprises the steps of:

- (d1) gross positioning the upper and lower bends; and,
- (d2) fine positioning the upper and lower bends.

Claim 31 (new)

The method of Claim 27, wherein at least one of the rollers is motorized and wherein Step (f) is performed by using the motorized rollers.

Claim 32 (new)

The method of Claim 27, wherein the metal is one of aluminum, galvanized steel, stainless steel, and carbon steel.

Claim 33 (new)

The method of Claim 27, wherein a first one of the roller track sides is the tank wall and wherein a second one of the roller track sides is formed from an opposing vertical portion of the lower bend.

Claim 36 (new)

The method of Claim 27, further comprising the step of cutting an upper edge of the tank wall to create an upper circumferential tank edge that is substantially parallel to the ground.

Claim 37 (new)

The method of Claim 27, further comprising the step of cutting a lower edge the tank wall to create a lower circumferential tank edge that is substantially parallel to the ground.

Claim 38 (new)

A circular metal tank wall manufactured according to the method of Claim 27.

Claim 39 (new)

A tank comprising the circular metal tank wall of Claim 38.

Claim 40 (new)

A system for manufacturing a circular metal tank wall from an elongate metal sheet, said system comprising:

- a. at least one bender/corrugator, wherein said bender/corrugator bends an upper edge of the metal sheet one or more times to produce an upper bend and wherein said bender/corrugator bends a lower edge of the metal sheet one or more times to produce a lower bend;
- b. a welder used to weld the upper edge of the metal sheet and the lower edge of the metal sheet together, wherein the upper bend and the lower bend cooperate to form a roller track when the upper edge of the metal sheet and the lower edge of the metal sheet are welded, wherein the roller track has two opposing track sides; and,
- c. a plurality of rollers that are received between the roller track sides, wherein the tank wall is supported by said rollers when they are received between the roller

track sides, and wherein the tank wall rides on said rollers when the tank wall is rotated about its longitudinal axis.

Claim 41 (new)

The system of Claim 40 wherein one bend produced by said bender is a chair-bend.

Claim 42 (new)

The system of Claim 40 wherein one bend produced by said bender is an "L"-bend.

Claim 43 (new)

The system of Claim 40, further comprising a decoiler used to decoil a coil of the elongate metal sheet prior to bending the upper and lower edges of the metal sheet.

Claim 44 (new)

The system of Claim 40, wherein the upper bend produced by said bender has an angle of between 45 and 135 degrees with the metal sheet.

Claim 45 (new)

The system of Claim 40, wherein the bends produced by said bender cooperate to produce a spacing of 5 mm to 100 mm between the roller track sides.

Claim 46 (new)

The system of Claim 40, further comprising a corrugator used to corrugate the metal sheet.

Claim 47 (new)

The system of Claim 40, wherein at least one of said rollers is motorized, and wherein said motorized roller causes rotation of the tank about a longitudinal axis of the tank as the tank is constructed.

Claim 48 (new)

The system of Claim 40, further comprising a positioner, wherein said positioner is used to align the upper bend proximate the lower bend for welding the upper and lower edges of the metal sheet together.

Claim 49 (new)

The system of Claim 48, further comprising a welding pre-aligner, wherein said pre-aligner is used to gross position the upper and lower bends before the upper and lower bends are aligned by said positioner.

Claim 50 (new)

The system of Claim 40, further comprising a vertical coil seam welder, wherein said vertical coil seam welder is used to butt-weld an end of a first metal sheet to an end of a second metal sheet.